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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/082,960	05/22/1998	ANN M. WOLLRATH	06502.0111-0	3411

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EXAMINER	
LAO, SUE X	

ART UNIT	PAPER NUMBER
2126	27

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/082,960	Applicant(s) Wollrath, et al
	Examiner S. Lao	Art Unit 2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jun 23, 2003*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, and 98-114* is/are pending in the application.

4a) Of the above, claim(s) *44-52* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *34-41, 53-61, 64-68, 70-75, 77-82, 84-89, 91-96, and 98-114* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 25
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Claims 34-41, 44-61, 64-68, 70-75, 77-82, 84-89, 91-96, 98-114 are pending. This action is in response to the amendments filed 3/25/2003 (amendment D) and 6/23/2003 (amendment F) and the RCE filed 6/23/2003. By amendment D, applicant has amended claims 34, 53, 54, 64, 67, 68, 71-75, 77, 78, 82, 85, 89, 92, 96, 99, 103 and 104, canceled claims 43, 63, 69, 76, 83, 90 and 97. By amendment F, applicant has added claims 106-114.

2. In the Response filed 3/1/2002, applicant has elected Group I, consisting of claims 34-43 and 53-63. Applicant is required to cancel the non-elected claims (claims 44-52).

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to adequately teach the claimed limitations "a parameter having a declared type", "a remote/local object having a specified type that is a superset of the declared type" as recited in claims 106-108, 110, 112 and 113, and "a return value having a declared type", "a remote object having a specified type that is a superset of the declared type" as recited in claims 109, 111 and 114.

In the application as filed, there does not appear to be any detailed descriptions or disclosure of a parameter having a declared type, a return value having a declared type, and a remote/local object having a specified type that is a superset of the declared type.

At best, applicant discloses parameter(s) and return value(s) of a remote method invocation. See pages 10, lines 19-25 and page 11, lines 4-8. Applicant fails to disclose a parameter having a declared type, a return value having a declared type, and a remote/local object having a specified type that is a superset of the declared type in the specification as filed.

Claims 106-114 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants recite "a parameter having a declared type", "a remote/local object having a specified type that is a superset of the declared type" in claims 106-108, 110, 112 and 113, and "a return value having a declared type", "a remote object having a specified type that is a superset of the declared type" in claims 109, 111 and 114. There does not appear to be a written description of the claimed limitations in the application as filed, for the reasons set forth in the objection to the specification.

5. Claims 34, 39-41, 53, 54, 59-61, 64, 66, 68, 70, 71, 73, 75, 77, 78, 80, 82, 84, 85, 87, 89, 91, 92, 94, 96, 98, 99, 101, 103-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaines (U S Pat. 5,961,582) in view of Hamilton et al (U S Pat. 6,009,464).

As to claims 34 and 54, Gaines teaches a method in a data processing system (distributed execution environment 301, fig. 3A and fig. 1) having a first program (virtual application on each server host computer 101 such as first server host) containing code (transferable program 302 including elements of user interface 203) and having a second program (virtual application on each server host computer 101 such as second server host), the method comprising the steps of: providing a first abstract computing machine (virtual operating system 141 executing on each/first server host 101) to the data processing system; providing a second abstract computing machine (virtual operating system 141 executing on each/second server host 101, another/separate instance of virtual

operating system 141) to the data processing system; running the first program on the first abstract computing machine (execute virtual application / execute transferable program 302 on first server host); running the second program on the second abstract computing machine (execute virtual application / execute transferable program 302 on second server host); sending (transfer) a portion of the code (transferable program 302 including elements of user interface 203) from the first program to the second program (from first to second server hosts); and running the portion of the code by the second program on the second abstract computing machine (execute program 302 at second server host). See col. 6, lines 22-46; col. 12, line 50 - col. 14, line 65; in particular, col. 14, lines 15-27.

Gaines does not teach based on stub code obtained from the second abstract computing machine.

Hamilton teaches communication between two programs on respective virtual machines, wherein stub code is obtained from a remote location to provide the stub functions of the communication (download object stub 471 as part of the downloaded code 460 from code server 440 to client 410). See col. 5, line 37 - col. 6, line 58. Given the teaching of Hamilton, it would have been obvious to send the portion of code (communication) based on stub code obtained from the second abstract computing machine (downloaded stub code). One motivation to combine the teachings of Gaines and Hamilton would be that Gaines desires to run programs in a host-independent manner (col. 5, lines 5-18), for which Hamilton provides a mechanism to do so (col. 6, lines 49-58). Therefore, one of ordinary skill in the art would have been motivated to use the mechanism of Hamilton to provide the host-independence in Gaines.

As to claims 39 and 59, Gaines teaches first/second computer system with a first/second processor (multiple host machines 101 in fig. 3A, each executing the virtual OS 141 on a processor, fig. 1), the second program has second code (transferable program 302 including user interface 203 transferred to and executing on each server host), receiving the first/second code by the first/second abstract computing machine (process control filter 151 for interprocess communication between first and second hosts); converting (translate) the first/second code into a format suitable to the first/second

processor by the first/second abstract computing machine (translate virtual request to request for actual resources); executing the first/second code in the format suitable to (use actual resource such as file system 105). See col. 6, lines 29-36, 42-46; col. 7, lines 15-30; fig. 1.

As to claims 40 and 60, Gaines teaches providing the first/second abstract computing machine to the first/second computer system (multiple host machines 101 in fig. 3A, each executing the virtual OS 141). See col. 12, line 50 - col. 14, line 65.

As to claims 41 and 61, Gaines teaches in a same manner (run programs in a host independent manner, relatively uniform environment in which program executes). See col. 4, lines 14-19; col. 5, lines 14-18.

As to claim 53, note the discussions of claims 34 and 41.

As to claims 64, 78, 92, it is covered by claim 34 except that the stub code being a stub class instance. Note discussion of claim 34 and the equivalence of executing/running. Gaines further teaches first/second computing environments (host machines 101, fig. 3A, or virtual OSes thereon), returning results (output, col. 10, lines 55-62). Regarding the stub code being a stub class instance, this is met by Hamilton in that the downloaded code and the stub code in Hamilton are implemented in Java language (col. 5, lines 50-65), wherein code and associated data are encapsulated in classes and instantiated into instances / objects.

As to claims 66, 73, 80, 87, 94, 101, Gaines teaches function (service), parameter (permission 147).

As to claims 68, 75, 82, 89, 96, 103, the system of Gaines is a runtime system.

As to claim 104, Gaines as modified teaches (Hamilton) the stub class instance (object stubs) is included in a second computing environment (stored in code server, col. 5, lines 50-65).

As to claims 70, 77, 84, 91, 98, 105, Gaines teaches returning results (error message, col. 8, lines 1-3).

As to claims 71, 85, 99, note discussion of claim 64 and Gaines further teaches receiving (fig. 3A).

6. Claims 35-38, 55-58, 65, 67, 72, 74, 79, 81, 86, 88, 93, 95, 100, 102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaines in view of Hamilton et al as applied to claims 34 and 54 and further in view of Priven et al (U S Pat. 5, 327,559).

As to claims 35 and 55, Priven teaches sending an object (CIP object 702) containing a portion of code (action 706) of one program to another program for remote execution in a distributed execution environment. See fig. 7A and denoting text. Given the teaching of Priven, it would have been obvious to send an object containing the portion of the code to the second program. In so doing, the platform-independence of messaging in Gaines would have been enhanced by the self-describing nature of the message format of Priven (col.12, lines 34-47).

As to claims 36 and 56, Gaines as modified teaches (Priven) sending data (parameters 708) for remote execution. See fig. 7A and denoting text. Note discussion of claim 35 for a motivation to combine.

As to claims 37, 38, 57 and 58, Gaines teaches the second/first program has a function (program 302 in each server host computer 101), invoking the function by the first/second program (for execution on a server host computer 101). See col. 14, lines 15-27; fig. 3A, 3B. Priven teaches that, between two distributed programs, code (action 114) is part of an object (CIP object 702), passing the object as a parameter to a function (remote processing by application 1116) and returning the object as a result of (send response to sending system). See fig. 7A; col. 8, lines 12-24; col. 10, lines 6-25. Note discussion of claim 35 for a motivation to combine.

As to claims 65, 72, 79, 86, 93, 100, note discussion of claim 35.

As to claims 67, 74, 81, 88, 95, 102, note discussion of claims 38 and 66.

7. Applicant's arguments filed 3/25/2003 and 6/23/2003 have been considered but are moot in view of the new ground(s) of rejection.

As to the amended feature of based on stub code obtained from the second abstract computing machine, this is met by Hamilton who teaches communication between

two programs, wherein the stub code is obtained from a remote location to provide stub functions of the communication (download object stub 471 as part of the downloaded code 460 from code server 440). See col. 5, line 37 - col. 6, line 58. In Hamilton, both client stubs (object stubs) and server stubs (object skeletons) are downloaded at run time from a code server.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In particular, U S Pat. 5,548,726 to Pettus teaches a client desiring to access a remote service retrieves the appropriate service object from a communication directory service and uses the service object to set up the communication path.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7238 for After Final communications, (703) 746-7239 for Official communications and (703) 746-7240 for Non-Official/Draft communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Sue Lao Sue Lao
September 4, 2003